

REMARKS/ARGUMENTS

The above-identified patent application has been amended and re-examination and reconsideration are hereby requested.

It is first noted that claims 34-46 and 48 relate to plural phasor motors used to drive cylinder valves. Dielhl et al. (USP 5,765,513) does not describe a motor to drive cylinder valves. Reinicke (USP 5,318,064) does not use a motor to drive cylinder valves. Kato et al. (USP 6,224,034) does not describe using motors to drive cylinder valves.

It is next noted that Ueda et al., teaches returning energy to the converter 3 see col. 2, lines 40-44. Thus, Ueda et al., fails to recognize and, in fact, teaches away from transferring energy from one winding of a plural phasor motor to a winding of a second plural phasor motor. Ule et al., do not show a plural phasor motor and has no suggestion of transferring energy from a winding of a first plural phasor motor to a winding of a second plural phasor motor.

Finally, there is nothing in the art, which suggests transferring electrical energy generated in a stator winding of a first plural phasor motor driving a cylinder valve during closing of said first cylinder valve to a stator winding of a second plural phasor motor driving a second cylinder valve to open said second cylinder valve as set forth in claim 1, for example. In order to establish a *prima facie* case of obvious, the combination claimed by the applicant must be suggested in the prior art itself. That is, the prior art must suggest or recognize or provide some motivation for the claimed combination. The Examiner has not pointed to anything in the prior art that suggests, recognizes or provides some motivation to "transferring electrical energy generated in a stator winding of a first plural phasor motor driving a cylinder valve during closing of said first cylinder valve to a stator winding of a second plural phasor motor" as set forth in claim 1. Thus, it is respectfully submitted that the

Examiner has not set forth a prima facie case of obviousness against any of the claims 34-46 and 48. Rather, the Examiner seems to reach conclusion of obvious from facts not in, nor supported by, the record (i.e., the teachings found in the cited references themselves).

Thus, it is respectfully requested that the Examiner point to the sections of the cited art themselves which suggests, recognizes or provides some motivation to "transferring electrical energy generated in a stator winding of a first plural phasor motor driving a cylinder valve during closing of said first cylinder valve to a stator winding of a second plural phasor motor" as set forth in claim 34.

With regard to claims 35-46 and 48, it is respectfully submitted that the Examiner has not established a prima facie case of obvious based on the teaching of the cited art themselves.

More particularly, claim 35 points out that the method of claim 34 includes generating a current in said stator winding of the first plural phasor motor while de-accelerating said first cylinder valve towards a closed position; and, routing said current to stator winding of the second plural phasor motor to induce said second cylinder valve to move towards an open position. This is not suggested or described in the art cited by the Examiner.

Claim 37 points out that the method includes transferring electrical energy generated in a stator winding of a first plural phasor motor, such motor having the rotor thereof coupled to a first cylinder valve, to a stator winding of a second plural phasor motor, such second plural phasor motor having a rotor thereof coupled to a second cylinder valve, such electrical energy being used by the first plural phasor motor prior to the transfer during closing of said first cylinder valve, such transferred energy being used by the second plural phase motor to open said second cylinder valve. This is not suggested or described in the art cited by the Examiner.

Claim 38 points out that the method includes transferring electrical energy generated in a winding of a first plural phasor motor during closing of a first cylinder intake valve driven by the first plural phasor motor to a winding of a second plural phasor motor to open a second intake valve driven by the second plural phasor motor. This is not suggested or described *in the art* cited by the Examiner.

Claim 39 points out that the method includes recirculating a current generated in a winding of a first plural phasor motor used to drive a cylinder exhaust valve while de-accelerating said cylinder exhaust valve towards a closed position to a winding of a second plural phasor motor used to drive a cylinder intake valve to open said cylinder intake valve. This is not suggested or described *in the art* cited by the Examiner.

Claim 40 points out that the method includes recirculating a current generated in a winding of a first motor of a plural phasor motor driving a first exhaust valve while de-accelerating said first exhaust valve towards a closed position to a winding of a second plural phasor motor driving a second cylinder exhaust valve to open said second cylinder exhaust valve. This is not suggested or described *in the art* cited by the Examiner.

Claim 41 points out that the method includes recirculating a current generated in a winding of a first plural phasor motor driving a first cylinder intake valve while de-accelerating said cylinder valve towards a closed position to winding of a second plural phase motor driving a second cylinder intake valve to open said second cylinder intake valve. This is not suggested or described *in the art* cited by the Examiner.

Claim 42 points out that the method includes reversing a flow of current in a winding of a plural phasor motor communicating with a first engine cylinder valve when said first valve is being closed; and, directing said current to a winding of a second plural phasor motor communicating with a second engine cylinder to induce said second valve to move towards

an open position. This is not suggested or described in the art cited by the Examiner.

Claim 43 points out that the method of claim 42, the step of reversing said flow of current, occurs when said first valve is being de-accelerated towards a closed position. This is not suggested or described in the art cited by the Examiner.

With regard to claim 47, the Examiner acknowledges that Diehl et al. do not use a motor for the intake and exhaust valves. The Examiner points to Reinke which teaches a motor. However, neither one of these references teaches the use of a motor to drive intake and exhaust valve of a motor. Thus, a prima facie case has not been established by these two references. The claim then further points out that a current is generated in the first ball-screw valve assembly communicating with a first engine cylinder while de-accelerating said first valve assembly towards a closed position; and said current is directed to a second ball-screw valve assembly communicating with a second engine cylinder to induce said second valve assembly to move towards an open position. Again there is nothing in either of these two references taken either singly or in combination describe or suggest a method wherein which current is generated in the first ball-screw valve assembly communicating with a first engine cylinder while de-accelerating said first valve assembly towards a closed position; and said current is directed to a second ball-screw valve assembly communicating with a second engine cylinder to induce said second valve assembly to move towards an open position. Examiner seems to reach conclusion of obvious from facts not in, nor supported by, the record (i.e., the teachings found in the cited references themselves).

Claim 48 points out that a system includes a first control circuit coupled to a winding of a first plural phasor motor coupled to a first valve, said first valve controlling fluid communication with a first engine cylinder; and, a second circuit coupled to a winding of a plural phasor motor coupled to a second valve, said second valve controlling fluid communication with a second engine cylinder, wherein a current generated in the winding of said first motor while de-accelerating said first valve towards a closed position is routed through said winding of said first control circuit to said winding of second control circuit to



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induce said second valve to move towards an open position. This is not suggested or described in the art cited by the Examiner.

In the event any additional fee is required, please charge such amount to Patent and Trademark Office Deposit Account No. 50-0845.

Respectfully submitted,

Date

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